



U.S. Department of Commerce
BUREAU OF THE CENSUS
INTERNATIONAL TRADE ADMINISTRATION

Copper Controlled Materials

1983

ITA9008(83)-1

Issued September 1984

SUMMARY OF FINDINGS

The statistics in this publication are based on a survey of all known producers of brass mill products, copper-based powder products, and a 95-percent sample of producers of wire mill products. The figures represent total U.S. shipments of copper-base mill and foundry products.

Total shipments of copper-base and foundry products

totaled 4.9 billion pounds in 1983, slightly lower than the 1982 level. Copper wire mill shipments, at 2.3 billion pounds, were down 5 percent from 1982. Within this group, bare wire decreased 12 percent; insulated communication wire decreased 14 percent; and other insulated wire increased less than 1 percent.

A description of the survey methodology and related information appears on page 5.

Table 1. SUMMARY OF SHIPMENTS OF COPPER-BASE MILL AND FOUNDRY PRODUCTS: 1978 TO 1983

(Millions of pounds--metal weight)

Year	Total	Brass mill products		Copper wire mill products ¹			Brass and bronze foundry products ³	Copper-base powder mill products
		Alloyed	Unalloyed	Bare wire ²	Insulated communication wire	Other insulated wire		
1983.....	4,855	1,245	871	236	509	1,540	422	32
1982.....	4,897	1,247	767	267	594	1,532	456	34
1981.....	6,097	1,695	927	328	755	1,764	581	47
1980.....	5,889	1,508	959	293	797	1,693	592	47
1979.....	6,883	1,869	1,107	236	846	1,966	793	66
1978.....	6,429	1,750	962	238	806	1,867	743	63

Note: Detail may not add to totals due to independent rounding.

¹Represents copper content weight, rather than metal weight.

²Represents uninsulated, bare, tinned, and/or alloy coated wire.

³Source: Bureau of the Census, Current Industrial Report M33E, Nonferrous Castings.



Address inquiries concerning these figures to U.S. Department of Commerce, Bureau of the Census, Industry Division, Washington, D.C. 20233, or call James L. Oliver, (301) 763-5440.

For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Table 2. SHIPMENTS OF COPPER-BASE MILL AND FOUNDRY PRODUCTS: 1983, 1982 AND 1981

(Millions of pounds--metal weight)

Product description	1983	1982	1981
Total.....	4,855	4,897	6,097
Brass mill products ¹	2,116	2,014	2,622
Copper-base alloy:			
Sheet and strip ²	519	582	792
Rod, bar, and wire.....	633	565	765
Tube and pipe.....	93	100	138
Unalloyed copper:			
Sheet and strip.....	145	134	206
Rod, bar, and wire ³	98	101	123
Tube and pipe.....	628	532	598
Copper wire ⁵ mill products ^{1 4}	2,285	2,393	2,847
Bare wire.....	236	261	328
Insulated communication wire.....	509	594	755
Other insulated wire.....	1,540	1,532	1,764
Brass and bronze foundry products ^{6 7}	422	456	581
Copper-base powder mill products ¹	32	34	47
Copper-base alloy:			
Granular.....	7	6	7
Flake.....	1	(Z)	(Z)
Unalloyed copper:			
Granular.....	22	25	36
Flake.....	2	3	4

Note: Detail may not add to totals due to independent rounding. Monthly shipments data for brass mills and copper wire mills of primary companies are available in Current Industrial Report M33K, Inventories of Brass and Copper Wire Mill Shapes.

(Z) Less than 500,000 pounds.

¹Shipments by brass mills, copper wire mills, and copper-base powder mills include all controlled materials orders shipped by the respondent for his own account, by other copper controlled material producers for the respondent's account, or by the responding company under toll arrangements for the account of controlled materials consumers.

²Military ammunition cups and discs are included on a net-weight basis, i.e., excluding the weight of the webbing scrap generated in the cupping and discing operation.

³Does not include electrical wire.

⁴Reported in copper content weight rather than metal weight.

⁵Wire, uninsulated, bare, tinned, and/or alloy coated.

⁶Shipments by brass and bronze foundries include both shipments for sale (to the trade) and shipments for own use. Shipments for own use represent copper and copper-base alloy castings for use by the reporting company or an affiliate, subsidiary, or parent company. Also includes castings produced and consumed at the same location in the production of finished products.

⁷Source: Bureau of the Census, Current Industrial Report M33E, Nonferrous Castings.

Table 3. SHIPMENTS, EXPORTS, IMPORTS, AND APPARENT CONSUMPTION OF COPPER-BASE MILL AND FOUNDRY PRODUCTS: 1983 AND 1982

(Quantity in millions of pounds; value in thousands of dollars)

Product description ¹	Manufac- turers' shipments	Exports of domestic merchandise ^{1 2}			Percent exports to manufac- turers' shipments (quantity)	Imports for consumption ^{1 4}		Apparent consumption ⁶	Percent imports to apparent consumption (quantity)
		Quantity	Value at port	Estimated producers' value ³		Quantity	Value ⁵		
1983									
Total ⁷	2,384	115	193,583	188,375	5	386	414,722	2,655	15
Braas mill products:									
Copper-base alloy:									
Sheet and strip.....	519	13	40,692	39,597	3	182	176,243	1,296	14
Rod, bar, and wire.....	633	25	28,106	27,350	4				
Tube and pipe.....	93	14	23,374	22,745	15				
Unalloyed copper:									
Sheet and strip.....	145	3	3,413	3,321	2	54	59,785	273	20
Rod, bar, and wire.....	98	21	18,359	17,865	21				
Tube and pipe.....	628	8	11,826	11,508	1				
Copper wire mill products, bare wire.....	236	29	65,015	63,266	12	37	38,950	244	15
Copper-base powder mill products:									
Copper-base alloy:									
Granular.....	7	2	2,798	2,723	6	3	5,511	33	9
Flake.....	1								
Unalloyed copper:									
Granular.....	22								
Flake.....	2								
1982									
Total ⁷	2,315	112	217,977	212,114	5	305	339,551	2,508	12
Braas mill products:									
Copper-base alloy:									
Sheet and strip.....	582	7	36,803	35,813	1	151	149,454	1,280	12
Rod, bar, and wire.....	565	11	32,869	31,985	2				
Tube and pipe.....	100	13	29,044	28,263	13				
Unalloyed copper:									
Sheet and strip.....	134	26	20,033	19,494	19	35	39,159	213	16
Rod, bar, and wire.....	101	31	32,784	31,902	31				
Tube and pipe.....	532	8	14,682	14,287	2				
Copper wire mill products, bare wire.....	267	15	47,933	46,644	6	33	35,096	285	12
Copper-base powder mill products:									
Copper-base alloy:									
Granular.....	6	1	3,829	3,726	3	4	4,699	37	11
Flake.....	(2)								
Unalloyed copper:									
Granular.....	25								
Flake.....	3								

(Z) Less than 500,000 pounds.

¹ Comparison of domestic manufacturers' shipment, export numbers, and import numbers for copper-base mill and foundry products is shown in table 4.² Source: Bureau of the Census report EM 546, U.S. Exports.³ These values were derived by use of adjustment factors to exclude freight, insurance, and other charges incurred in moving goods to the port of export. This adjustment is made to convert the values to an approximation of the producers' value of exported goods. Current adjustment factors (0.9731 for industry group 335 relating to brass mill and copper wire mill products and 1.0 for industry group 339 relating to copper-base powder mill products) are based on data for 1981 which are published in Origin of Exports of Manufactured Products, M81(AS)-5, appendix B.⁴ Source: Bureau of the Census report IM 145-X, U.S. Imports for Consumption and General Imports.⁵ Represents the c.i.f. (cost, insurance, and freight) value at the first port of entry in the United States plus U.S. import duties.⁶ Apparent consumption is derived by subtracting exports from the total of net shipments plus imports.⁷ This total does not include either insulated wire and cable or brass and bronze foundry products.

Table 4. COMPARISON OF DOMESTIC MANUFACTURERS' SHIPMENTS, SCHEDULE B EXPORT NUMBERS, AND TSUSA IMPORT NUMBERS FOR COPPER-BASE MILL PRODUCTS: 1983

Product description	Export number	Import number
Copper mill products:		
Copper-base alloy:		
Sheet, strip, and plate.....	612.3360,612.3370,612.3380	612.3400,612.3500,612.3600,612.3800,612.3920,612.3940,
Rod, bar, and wire ¹	612.4620	612.3960,612.3980,612.4000,612.4100,612.4300,612.4410,
Tube and pipe.....	613.0520,613.0530	612.4430,612.4510,612.4520,612.5200,612.6100,612.6200,
Unalloyed copper:		612.6300,612.6410,612.6420,612.8100,612.8200
Sheet, strip, and plate.....	612.3320	613.0600,613.0800,613.1000,613.1100,613.1200
Rod, bar, and wire ¹	612.4640	
Tube and pipe.....	613.0540,613.0550	612.3000,612.3120,612.3140,612.3160,612.3200,
Copper wire mill products, bare wire.....	612.7420,612.7440	612.5000,612.6000,612.8000
Copper-base powder mill products:		613.0200,613.0300,613.0400
Copper-base alloy:		
Granular.....	612.5400	612.5500,612.5600
Flake.....		
Unalloyed copper:		
Granular.....		
Flake.....		

¹ The import and export numbers for this line do not include wire.

DESCRIPTION OF SURVEY

Scope of Survey—This survey covers producers of selected copper controlled materials, i.e., copper-base mill and foundry products.

Survey Methodology—The statistics in this publication on copper-base mill products were collected by mail on Bureau of the Census and International Trade Administration Form ITA9008, Copper Controlled Materials. The survey panel is based on a list of all known producers of copper-base mill shapes and powder products supplied by the Bureau of Industrial Economics (BIE), Department of Commerce. It also includes manufacturers who produce about 95 percent of wire mill products based on studies made by BIE. The data for wire mill products include estimates for small producers in order to represent 100 percent coverage. Approximately 190 companies are included in the mail panel.

Also included in this publication are estimates for foundry products, which are derived from Current Industrial Reports Series M33E, Nonferrous Castings. A description of the methodology for the survey from which these data are derived can be found in the January 1983 publication for this series.

Reliability of Data—Survey error may result from several sources: (1) inability to obtain information about all cases in the survey, (2) response errors, (3) definitional difficulties, (4) differences in the interpretation of questions (5) mistakes in recording or coding the data obtained, and (6) other errors of collection, response, coverage, and estimation for missing data. These nonsampling errors also occur in complete censuses. Although no direct measurement of the biases due to nonsampling errors has been obtained, precautionary steps were taken in all phases of the collection, processing, and tabulation of the data in an effort to minimize their influence.

A major source of bias in the published estimates is due to imputing data for nonrespondents, for late reporters, and for data which fail logic edits. Missing figures are imputed based on quarter-to-quarter movements shown by reporting firms. Imputation generally is limited to a maximum of 10 percent for any one data cell. Figures with imputation rates greater than 10 percent are footnoted.

The imputation rate is not an explicit indicator of the potential error in published figures due to nonresponse because the actual quarterly movements for nonrespondents may or may not closely agree with the imputed movements. The range of difference between the actual and imputed figures is not precisely known but is assumed to be small. The degree of uncertainty regarding the accuracy of the published data increases as the percentage of imputation increases. Figures with imputation rates above 10 percent should be used with caution.

Revisions to Previous Period Data—Quarterly data and data for prior years may be revised as the result of corrected figures from respondents or other corrections. Figures which have been revised by more than 5 percent from previously published figures are indicated by footnotes.

EXPLANATION OF TERMS

Shipments—Shipments include all copper-base mill and foundry product controlled materials. Both products produced by the company which owns the materials and products produced for others under toll agreements are included.

Shipments by brass and bronze foundries include both shipments for sale (to the trade and shipments (production) for own use. Shipments for own use represent copper and copper-base alloy castings for use by the reporting company or by a subsidiary, parent, or other affiliated company. Also included are castings produced and consumed at the same location in the production of finished products.

Copper-Base Mill Products—Products produced by rolling, drawing, and extruding copper, brass, bronze, and other copper-base alloy basic shapes. Drawing and insulating of copper wire are also included. Intermediate shapes of powder mill products are included. All other intermediate shapes are excluded. An intermediate shape is any product which has been rolled, drawn, or extruded from refined copper or brass, and which will be rerolled, redrawn, insulated, or further processed into finished brass mill or copper wire mill products (or into another intermediate shape) by other producers of intermediate or finished shapes of copper controlled materials.

Controlled Materials—Steel, copper, aluminum, and nickel alloys, either domestic or imported, in the forms and shapes specified in Defense Materials Systems, regulation 1, as revised, whether new, remelted, rerolled, or redrawn.

COMPARISON OF EXPORT, IMPORT, AND DOMESTIC OUTPUT DATA

The Standard Industrial Classification (SIC) system used for domestic output and the statistical export and import commodity classifications were developed independently. This results in considerable difficulty in comparing the three types of data for many commodity areas. The domestic output classification is based on type of industry; on the other hand, the export and import classification system is more materials oriented. Aside from the differences in the basic commodity classifications, there are additional problems involving import data, since there are a substantial number of imported commodities which are not produced in the United States or which are produced only in very small quantities and which, therefore, have no comparable domestic output classification. The relationships shown in this report should be considered only as approximations, since, in addition to the problems mentioned above, there are also the following problems affecting the comparability of the three sets of data.

Valuation—There are different methods of valuation for the three types of data:

Domestic Output—Valued at the point of production. It includes the net sales price, f.o.b. plant, after discounts and allowances, exclusive of freight charges and excise taxes.

Exports—Valued at the point of exportation. It includes the selling price, or cost if not sold, and inland freight, insurance, and other charges to the export point.

Estimated producers' values of exports have also been developed. These values more closely approximate the values reported for domestic output because they exclude freight, insurance, and other charges applied from the producing plant to the export point.

Imports—Valued at the first port of entry in the United States. It includes c.i.f. (cost, insurance, and freight), duty, and other charges to the import point.

Duplication in Quantity and Value of Output—Because producers' shipments of some commodities may be used as materials for incorporation into other commodities, combinations of data for such commodities may contain a certain amount of duplication. Thus, percentages of exports to output or imports to apparent consumption (output plus imports minus exports) at four-digit or broader levels may be understated. Where duplication is known to be substantial, the output data are appropriately noted in the table.

Estimated Low-Valued Export and Import Transactions—The import statistics include estimated value data for shipments valued under \$251. Effective August 1982, value data for shipments valued under \$251 are estimated from factors based on the ratios of under \$251 shipments to individual country totals. Prior to August 1982, estimates were based on a 1-percent sample of documents for shipments valued under \$251. Effective with the statistics for March 1979, the lower limit of the value ranges for estimating data for low-value export shipments was raised from \$251 to \$501. Effective July 1981, the statistics for countries other than Canada reflect fully compiled data for shipments valued over \$500. Prior to July 1981, these data were fully compiled only for shipments valued \$1,000 and over, while shipments valued \$501 to \$999 were estimated, based on a 50 percent sample.

Manufacturers' Shipments, Not Specified by Kind—The value of manufacturers' shipments at the four-digit industry level often includes a small amount which is not distributed among the individual five-digit product classes. Export and import percentages at the more detailed levels might, therefore, be slightly overstated.

Time Lag Between Output and Exports—There will be a lag between the time a commodity is produced or shipped by the

producer and the time it is actually exported, especially when intermediaries (wholesalers, exporters, etc.) are involved. Ordinarily, this type of discrepancy is insignificant in annual figures.

"Direct" vs "Total" Commodity Exports and Imports—Export and import data do not include materials which are incorporated into other more finished products and exported or imported in finished form. Thus, by showing only direct exports and imports, the relation of exports to output and imports to apparent consumption for intermediate products is considerably understated.

Used Commodities—With a few exceptions, used or rebuilt commodities are classified in the same import or export codes as is new merchandise. Percentages are thus overstated to the extent that used or rebuilt products are significant in trade.

Geographic Area of Coverage—Import and export data reflect the movement of merchandise into and out of U.S. foreign trade zones, the U.S. Virgin Islands, and the U.S. customs territory (includes the 50 States, the District of Columbia, and Puerto Rico).

HISTORICAL NOTE

Data on copper-controlled materials have been collected by the Bureau of the Census since 1951. Historical data may be obtained from Current Industrial Reports (called Facts for Industry before 1959) available at your local Federal Depository Library. A list of these libraries may be obtained from the Bureau of the Census regional offices:

Office	Telephone
Atlanta, Georgia	(404) 881-2271
Boston, Massachusetts	(617) 223-2327
Charlotte, North Carolina	(704) 371-6142
Chicago, Illinois	(312) 353-6251
Dallas, Texas	(214) 767-0625
Denver, Colorado	(303) 234-3924
Detroit, Michigan	(313) 226-7742
Kansas City, Kansas	(816) 374-4601
Los Angeles, California	(213) 824-7317
New York, New York	(212) 264-3860
Philadelphia, Pennsylvania	(215) 597-4920
Seattle, Washington	(206) 442-7080

RELATED REPORTS

A quarterly Current Industrial Report is published in this series. The Bureau of the Census also publishes the following related reports:

Series	Frequency	Title
<i>Current Industrial Reports</i>		
M33E	Monthly	<i>Nonferrous Castings</i>

Series	Frequency	Title	Subject Area	Contact	Phone Number
MA33L	Annual	<i>Insulated Wire and Cable</i>	Manufacturers' Shipments, Inventories, and Orders	Ruth Runyan	(301) 763-2502
<i>Other Industry Reports</i>					
M3-1	Monthly	<i>Manufacturers' Shipments, Inventories, and Orders</i>	Census/ASM	Dale Gordon	(301) 763-7304
(AS)	Annually	<i>Annual Survey of Manufactures (ASM)</i>	To order a Census Bureau publication	Customer Services (DUSD)	(301) 763-4100
(MC)	Quinquennially	<i>Census of Manufactures</i>	Foreign Trade publication	Juanita Noone	(301) 763-5140
<i>Foreign Trade Reports</i>			International Trade Administration	Graylin Presbury	(202) 377-0383
EM 546	Monthly	<i>U.S. Exports</i>	ACKNOWLEDGMENTS		
IM 145-X	Monthly	<i>U.S. Imports for Consumption and General Imports</i>			

CONTACTS FOR DATA USERS

Subject Area	Contact	Phone Number
Current Industrial Report ITA9008	James L. Oliver	(301) 763-5440

This report was prepared in the Industry Division, Bureau of the Census, under the direction of Malcolm Bernhardt, Chief, Current Durables Branch, and Jesse Havard, Chief, Metals Section. Jim Oliver was directly responsible for the review of the data and preparation of the report. Gaylord E. Worden, Chief of the Division, and Thomas L. Mesenbourg, Assistant Chief for Current Industrial Reports, provided overall direction and coordination to this project.

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